

REMARKS

In the Final Office Action dated August 9, 2005, Examiner Patel rejected pending claims 16-18, 20 and 28 under 35 U.S.C. §103(a) as being unpatentable over “A fast marching level set method for monotonically advancing fronts”, Applied Mathematics, 1996 to *Sethian* in view of “Global Minimum for Active Contour Models: a Minimal Path Approach”, IEEE, 1997 to *Cohen* et al. The Applicant responds to this rejection as subsequently recited herein, and respectfully requests reconsideration and further examination of the present application under 37 CFR § 1.114.

As to the rejection, the Applicant has again thoroughly considered Examiner Patel’s remarks concerning the patentability of claims 16-18, 20 and 28 over *Sethian* in view of *Cohen*. The Applicant has also thoroughly re-read *Sethian* and *Cohen* in combination. To warrant this §103(a) rejection of claims 16-18, 20 and 28, all the claim limitations recited in independent claims 16 and 28 must be taught or suggested by the combination of *Sethian* and *Cohen*. See, MPEP §2143. The Applicant respectfully traverses this §103(a) rejection of claims 16-18, 20 and 28, because *Sethian* and *Cohen* in combination teaches away from “back propagating the front along a first track starting at the end point through the children and the fathers of the first track until the start point is reached whereby the points of the path following the threadlike structure in the image are extracted” as recited in independent claim 16, and “means for marching a front from the start point through points dented as fathers and children to the end point and to subsequently propagate backwards from the end point through each child and father of a first track until the start point is reached” as recited independent claim 28.

As to the traversal, Examiner Patel has correctly recognized the failure of *Sethian* to teach or suggest the aforementioned limitations of independent claims 16 and 28, and careful review of *Cohen* reveals the fact that *Cohen* teaches away from the aforementioned limitations of independent claims 16 and 28.

Specifically, as stated in the Background of this patent application, “[t]he method known from COHEN’s publication constructs the convex surface of the cost map using said Fast Marching technique, which provides respectively one path of minimal cost joining the start point to each respective point of the front, said front propagating until the end point is reached. Then, the minimal path is provided by back-propagating from the end point to the start point by the steepest gradient descent in the convex surface. The numerous paths constructed by propagating the front forwards and joining the start point to the different points of the front for forming the convex surface are no longer taken into account. Even the path joining the start point to the end point, in the operation of forwarding the front, is not the steepest gradient descent in the back-propagation operation. So, the final path obtained by this known method does not comprise points extracted by tracking. Neither does it comprise points of a path constructed by front propagation.” See, U.S. Patent Application Serial No. 09/587,394 at page 2, lines 16-25.

The aforementioned description of Section 3.5 of *Cohen* as provided by the Background section of the present application is accurate. The Applicant therefore strongly encourages Examiner Patel to re-read *Cohen* several times to thereby attain a proper understanding of *Cohen* as recognized by the Applicant.

Withdrawal of the rejection of independent claims 16 and 28 under 35 U.S.C. §103(a) as being unpatentable over *Sethian* in view of *Cohen* is therefore respectfully requested.

Claims 17, 18 and 20 depend from independent claim 16. Therefore, dependent claims 17, 18 and 20 include all of the elements and limitations of independent claim 16. It is therefore respectfully submitted by the Applicant that dependent claims 17, 18 and 20 are allowable over *Sethian* in view of *Cohen* for at least the same reasons as set forth herein with respect to independent claim 16 being allowable over *Sethian* in view of *Cohen*. Therefore, withdrawal of the rejection of dependent claims 17, 18 and 20 under 35 U.S.C. §103(a) as being unpatentable over *Sethian* in view of *Cohen* is respectfully requested.

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SUMMARY

The Applicant respectfully submits that claims 16-29 as listed herein fully satisfy the requirements of 35 U.S.C. §§ 102, 103 and 112. In view of the foregoing, favorable consideration and early passage to issue of the present application is respectfully requested. If any points remain in issue that may best be resolved through a personal or telephonic interview, Examiner Patel is respectfully requested to contact the undersigned at the telephone number listed below.

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Respectfully submitted,
Rauol Florent

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